

**FUSION PROTEINS COMPRISING CARRIERS THAT CAN
INDUCE A DUAL IMMUNE RESPONSE**

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Abstract

10 The subject invention provides a fusion protein for producing a dual immune response
in a vertebrate, which fusion protein comprises: (a) a first proteinaceous portion analogous to
all or part of a peptide endogenously synthesized within the vertebrate, the activity of which
peptide is to be inhibited within the vertebrate, and which proteinaceous portion by itself is
incapable of eliciting an effective immunoinhibitory response in said vertebrate; connected to
15 (b) a second proteinaceous portion analogous to all or part of an immunogen from a
pathogen, which pathogen is capable of pathogenically infecting the vertebrate; the portion (b)
causing the vertebrate's immune system to recognize the portion (a) and produce a response
that: (i) inhibits the activity of the peptide endogenously synthesized within the vertebrate; and
(ii) protects the vertebrate from infection by the pathogen, when the vertebrate is vaccinated
with an effective amount of the fusion protein. The subject invention also provides fusion
proteins which comprise a proteinaceous portion (b) that is a carrier that is analogous to all or
part of a BHV-1 antigen, which fusion proteins induce in a vertebrate vaccinated with an
20 effective amount of such fusion protein an immune response that inhibits the activity of a
peptide as recited in (a), above.

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